IN THE CLAIMS

Please substitute the following listing of claims for the previous listing of claims.

1. (previously amended) A method of treating a chamber to at least partially remove residue from surfaces in the chamber, the method comprising:

(a) transferring a substrate into the chamber and electrostatically holding the substrate on an electrostatic chuck;

(b) providing an energized first process gas comprising one or more of CF_4, SF_6 and NF_3 in the chamber to treat the surfaces in the chamber; and

(c) providing an energized second process gas in the chamber to further treat the surfaces in the chamber and to assist in de-chucking the substrate from the electrostatic chuck, the second process gas being different than the first process gas.

2-3. (canceled)

4. (original) A method according to claim 1 wherein the second process gas comprises an oxygen containing gas.

5. (original) A method according to claim 4 wherein the oxygen containing gas consists essentially of oxygen.

6. (previously amended) A method according to claim 1 wherein the treating of the chamber comprises cleaning a surface of a wall in the chamber.

7. (previously amended) A method of etching a substrate comprising a metal silicide containing layer and a polysilicon containing layer in a chamber and cleaning etchant residue formed on surfaces in the chamber, the method comprising the steps of:

(a) electrostatically holding the substrate comprising the metal silicide and polysilicon containing layers on an electrostatic chuck in the chamber;

(b) in a first stage, providing an energized first process gas in the chamber to etch through the metal silicide containing layer, the first process gas comprising a substrate etching gas and a first cleaning gas comprising a fluorinated gas;

(c) in a second stage conducted after (b), providing a second energized process gas in the chamber to etch through the polysilicon containing layer; and

(d) in a third stage conducted after (c), providing an energized second cleaning gas comprising an electronegative plasma in the chamber, the energized second cleaning gas being different from the first cleaning gas.

8. (canceled)

9. (previously amended) A method according to claim 7 wherein the fluorinated gas comprises one or more of CF_4, SF_6 and NF_3.

10. (original) A method according to claim 7 wherein the second cleaning gas comprises an oxygen containing gas.

11. (original) A method according to claim 10 wherein the oxygen containing gas consists essentially of oxygen.

12. (previously amended) A method according to claim 7 wherein the substrate etching gas comprises a gas capable of etching a tungsten silicide layer on the substrate.

13. (original) A method according to claim 7 wherein the substrate etching gas comprises one or more of Cl_2, N_2, O_2, HBr and He-O_2.

14. (original) A method according to claim 7 wherein the volumetric flow ratio of substrate etching gas to first cleaning gas is from about 1:1 to about 20:1.

15. (original) A method according to claim 7 wherein the energized second process gas is provided in the chamber while the substrate is in the chamber.

16. (canceled)

17. (previously amended) A method according to claim 7 wherein in the third stage, the chamber pressure is maintained at from about 1 mTorr to about 10mTorr.

18. (previously amended) A method according to claim 7 wherein in the third stage, the ratio of source power to bias power is from about 5:3 to about 40:1.

19. (previously amended) A method of etching a substrate in a chamber and cleaning etchant residue from surfaces in the chamber, the method comprising the steps of:

(a) electrostatically holding the substrate in the chamber;

(b) providing an energized first gas in the chamber, the energized first gas being capable of etching a first material on the substrate thereby depositing a first etchant residue on the surfaces in the chamber;

(c) after (b), providing an energized second gas comprising a fluorinated cleaning gas in the chamber, the energized second gas being capable of etching a second material on the substrate while suppressing deposition of a second etchant residue onto the first etchant residue, the first etchant residue being compositionally different from the second etchant residue; and

(d) after (c), providing a cleaning gas comprising an oxygen containing gas in the chamber and coupling RF power to energize the cleaning gas to clean the first and second etchant residue deposits formed on the surfaces in the chamber and simultaneously remove residual charge accumulated in the substrate.

20-23. (canceled)

24. (previously amend d) A method according to claim 19 wherein the fluorinated cleaning gas comprises one or more of CF_4, SF_6 and NF_3.

25. (canceled)

26. (previously amended) A method according to claim 19 wherein the oxygen containing gas consists essentially of oxygen.

27. (previously amended) A method of etching a substrate comprising a metal silicide containing layer in a chamber and at least partially removing etchant residue from surfaces in the chamber, the method comprising the steps of:

(a) electrostatically holding the substrate comprising the metal silicide containing layer in the chamber;

(b) providing a first energized gas comprising a fluorinated gas in the chamber, the first energized gas comprising an etchant gas to etch the metal silicide containing layer on the substrate; and

(c) providing a second gas in the chamber and energizing the second gas by coupling RF power to the second gas to at least partially remove etchant residue from the surfaces in the chamber and simultaneously remove residual charge accumulated in the substrate.

28. (canceled)

29. (previously amended) A method according to claim 27 wherein the fluorinated gas comprises one or more of CF_4, SF_6 and NF_3.

30. (original) A method according to claim 27 wherein the second energized gas comprises an oxygen containing gas.

31. (original) A method according to claim 30 wherein the oxygen containing gas consists essentially of oxygen.

32. (previously amended) A method according to claim 27 wherein the etchant gas comprises a gas capable of etching a tungsten silicide layer on the substrate.

33. (previously amended) A method according to claim 27 wherein the etchant gas comprises one or more of Cl_2, N_2, O_2, HBr and $He-O_2$.

34. (previously amended) A method according to claim 27 wherein the fluorinated gas comprises a fluorinated cleaning gas, and wherein a volumetric flow ratio of etchant gas to fluorinated cleaning gas is from about 1:1 to about 20:1.

35. (previously amended) A method of etching a substrate in a chamber and cleaning residue that forms on surfaces in the chamber, the method comprising the steps of:

(a) placing the substrate in the chamber and electrostatically holding the substrate on an electrostatic chuck;

(b) in an etching stage, etching one or more materials on the substrate using energized gas, at least one composition of the energized gas including an etching gas comprising one or more of Cl_2, N_2, O_2, HBr and $He-O_2$; and a residue cleaning gas comprising one or more of CF_4, SF_6 and NF_3; and

(c) cleaning the residue formed on the surfaces in the chamber and assisting in dechucking the substrate from the electrostatic chuck using another energized gas comprising oxygen.

36. (original) A method according to claim 35 wherein the volumetric flow ratio of etching gas to residue cleaning gas is from about 1:1 to about 20:1.

37-38. (canceled)

39. (original) A method of etching a substrate in a chamber and cleaning residue formed on surfaces in the chamber, the chamber comprising an electrostatic chuck, and the method comprising the steps of:

(a) transferring a substrate into the chamber and electrostatically holding the substrate on the electrostatic chuck, the substrate comprising a mask layer;

(b) providing an energized gas in the chamber to etch the mask layer on the substrate thereby forming residue on the surfaces in the chamber, the residue comprising chemical species originating from the mask layer;

(c) providing another energized gas in the chamber to etch material below the mask layer, the energized gas comprising etching gas and residue cleaning gas, the etching gas comprising one or more of Cl_2, N_2, O_2, HBr, and $He\text{-}O_2$ and the residue cleaning gas comprising one or more of CF_4, SF_6, and NF_3; and

(d) providing an oxygen containing plasma in the chamber to assist in dechucking the substrate and to clean the residue formed on the surfaces in the chamber.

40. (original) A method according to claim 39 wherein the volumetric flow ratio of etching gas to residue cleaning gas is from about 1:1 to about 20:1.

41. (currently amended) A method of cleaning a chamber to remove residue from surfaces of a ceiling portion in the chamber, the chamber having an antenna adjacent to the ceiling portion, and the method comprising the steps of:

(a) providing an energized ~~first~~ process gas in the chamber to clean the surfaces in the chamber, the ~~first~~ process gas consisting essentially of oxygen; and

(b) setting a chamber source power level applied to the antenna to remove residue from the surfaces of the ceiling portion.

42. (original) A method according to claim 41 wherein step (b) comprises increasing the chamber source power to increase the amount of residue removed from the surfaces.

43-46. (canceled)

47. (previously amended) A method of etching a substrate in a chamber and at least partially removing etchant residue from surfaces in the chamber, the method comprising:

(a) supporting the substrate in the chamber, the substrate having a metal silicide containing layer thereon;

(b) providing an energized gas in the chamber to etch through the metal silicide containing layer, the energized gas comprising a fluorinated gas;

(c) after (b), providing an energized gas consisting essentially of O_2 in the chamber to at least partially remove etchant residue from the surfaces in the chamber and to remove residual charge accumulated in the substrate; and

(d) after (c), removing the substrate from the chamber.

48. (previously amended) A method according to claim 47 wherein (b) comprises providing an energized gas comprising an etchant gas comprising one or more of Cl_2, N_2, O_2, HBr, and He-O_2.

49. (previously amended) A method according to claim 47 wherein (b) comprises providing a fluorinated gas comprising one or more of CF_4, SF_6, and NF_3.

50. (canceled)

51. (previously amended) A method of etching a substrate in a chamber and at least partially removing etchant residue from surfaces in the chamber, the method comprising:

(a) electrostatically holding the substrate in the chamber, the substrate having a first and a second layer thereon, the second layer comprising a metal silicide layer;

(b) providing a first energized gas in the chamber to etch the first layer;

(c) providing a second energized gas in the chamber to etch the second layer and at least partially remove the etchant residue formed on the surfaces in the chamber in (b); and

(d) providing an energized cleaning gas to at least partially remove residues formed on surfaces in the chamber in (b) and (c) and simultaneously remove residual charge accumulated in the substrate.

52. (previously added) A method according to claim 51 wherein the second energized gas comprises carbon and fluorine species.

53. (previously added) A method according to claim 51 wherein the second energized gas comprises sulfur and fluorine species.

54. (previously added) A method according to claim 51 wherein the second energized gas comprises nitrogen and fluorine species.

55. (previously added) A method according to claim 19 wherein the substrate comprises a metal silicide layer, and wherein (c) comprises providing the energized second gas comprising the fluorinated cleaning gas to etch the metal silicide layer.

56. (previously added) A method according to claim 41 wherein (b) comprises setting a chamber source power level applied to the antenna of about 500 Watts.

57. (previously added) A method according to claim 51 wherein (c) comprises providing a second energized gas comprising a fluorinated gas.